



environmental consultants, inc.

cc Cover Doug
Susan

M/035/020

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January 11, 2006

Mr. Daron R. Haddock
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84114-5801

Subject: Response to Fifth Review of Notice of Intention (NOI) to Commence Large Mining Operations, Lakeview Rock Products, Inc. Beck Street Quarry M/035/020, Dated December 13, 2005

Dear Mr. Haddock:

The following responses are provided on behalf of Lakeview Rock Products, Inc. to address the Division's written comments dated December 13, 2005 on the NOI for the Beck Street Quarry. In addition to the below listed changes to the NOI, the surety calculation has been revised to agree with these changes, and has been updated to the current format per verbal comment from Doug Jensen. The revised text is shown on the included pages as red-lined/strikeout. The entire NOI text is provided, with tabs showing pages with changes. The revised Appendix D bond cost estimate spreadsheet is provided with notes describing the changes. Appendices A, B, C and the Figures will remain the same and are not included in this submittal.

R647-4-106 – Operation Plan

106.6

Lakeview has noted the comment regarding vegetation present on the topsoil piles. A statement has been added to Section 4.5 agreeing to check the piles periodically for invasions of State-listed noxious weeds, and to take evasive action if necessary.

The topsoil present on the relatively undisturbed 12 acres would be highly difficult to salvage due to the steep slopes in this portion of the project area. Topsoils will not be salvaged from this area, and topsoils will not be stockpiled for reclamation of the pit floor. Clarifications to this effect have been made in Sections 4.6 and 6.3 and 7.2.

The discrepancies between Sections 7.2 and 7.5 have been resolved. The 2-3 inches of topsoil mentioned previously in Section 7.2 were expected to be salvaged from the noted 12-acre area. In consideration of steep slopes, however, this is not expected to be feasible. Section 7.5 (#3 and #6) have been revised to show that no stockpiled topsoil would be utilized in combination with the in-situ pit floor material.

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Lakeview Rock Products, Inc.
Response to NOI Comments of 12-13-05

January 11, 2006
DIV. OF OIL, GAS & MINING
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The plan already includes pit floor material testing for parameters related to plant growth. We have increased the number of samples to be taken to reflect one sample per 5 acres (See Section 7.5, #6 and Section 7.2, Pit Floor).

106.7 Existing vegetation – species and amount

The notations designating skeletonleaf bursage and cheatgrass as noxious weeds have been removed from the vegetation list in Section 4.7. The notation description has been changed to read “noxious weed or new and invading weed in the State of Utah”, and Dalmation toadflax is included in this category.

R647-4-112 - Variance

Sections 4.6 and 6.3 have both been revised to state that no topsoils would be salvaged from the undisturbed 12-acre area due to steep slopes. Section 8.0 has been revised to request a variance for salvaging of topsoils on this 12-acre area. A statement has been added to Section 8.0 in response to Mr. Paul Baker's question regarding which variance is being sought – for salvaging soil, or redistributing soil, or both. The added statement clarifies the request for variance for redistribution of the existing limited stockpiled topsoils on the upper bench, due to access restrictions.

The variance request from the 70% vegetative cover following reclamation is based upon the percentage of non-weed (or acceptable cover) species found in the existing vegetation. For the pit floor, the success standard of 60% is requested; using the 34% cover of desirable vegetation as measured in 2004, this would equate to a cover standard of 20.4. This is clarified in Sections 4.7 and 8.0.

All of the items noted in the December 13, 2005 Review letter are addressed above. It is hoped that the approval process can be moved forward, as well as review of the Thomas Pit Amendment. If you have any questions, please contact me at 943-4144, or Russell Larsen at 292-1411. Thank you.

Sincerely,

A handwritten signature in cursive script, appearing to read "Linda Matthews", enclosed within a large, loopy oval shape.

Linda Matthews
JBR Environmental Consultants, Inc.

cc: Lynn Pace, Salt Lake City Corporation
Russell Larsen, Lakeview Rock Products, Inc.

**Notice of Intention
to
Commence Large Mining Operations
Lakeview Rock Products, Inc.
Beck Street Quarry
M/035/020**

January 2004
Revised November 2004
Revised April 2005
Revised September 2005
Revised January 2006

Submitted by:

Lakeview Rock Products, Inc.
P.O. Box 540700
900 North Redwood Road
North Salt Lake, UT 84054-0700

to:

Utah Division of Oil, Gas and Mining
P.O. Box 145801
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Prepared by:

JBR Environmental Consultants, Inc.
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Sandy, Utah 84093
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**Notice of Intention
to
Commence Large Mining Operations
Lakeview Rock Products, Inc. Beck Street Quarry**

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List of Figures

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- Figure 1 Location and Land Status Map
- Figure 2 Site Map, Ownership, & Water Resources
- Figure 3 Facility Map
- Figure 4 Final Pit Plan Cross Sections (see map pocket)
- Figure 5 Final Pit Plan
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Appendices

- Appendix A – Correspondence
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- Appendix D – Calculations

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Introduction

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Lakeview Rock Products, Inc. (Lakeview) mines gravels, cobbles, and other rock products in northern Salt Lake City, Utah from a quarry known as the Beck Street Quarry. Lakeview and Hughes and Hughes Investment Corporation - the surface property owner and the owner of the mineral rights underlying the surface, are both owned by Glen E. Hughes.

On January 14, 2003, Lakeview was notified by the Utah Division of Oil, Gas and Mining (UDOGM) that the Beck Street Quarry no longer qualified for a categorical exclusion under the Utah Mine Land Reclamation Act. UDOGM indicated that Lakeview needed to obtain a large mining permit in order to comply with the Act's administrative rules. A file number, M/035/020, was assigned to the operation. This Notice of Intent (NOI) represents Lakeview's application to obtain a large mining permit in order to continue operating the Beck Street Quarry. It addresses all of the required elements of Utah Rule R647-4, as in effect September 1, 2003, including the development of an Operations Plan and a Reclamation Plan.

Prior to UDOGM's involvement, Lakeview - along with other rock product mining operators along Beck Street - had participated in two reclamation planning efforts to address Salt Lake City Corporation Planning Commission's (SLC) aesthetic and environmental concerns in the area. The first of these resulted in a Mining and Reclamation Plan that was prepared by Reclamation Projects, Inc. (RPI) (1995). In November 1996, SLC and Lakeview signed a Development Agreement which included rezoning agreements, a reclamation surety bond, and adoption of the provisions of the 1995 plan in total. In 1997, SLC and the City of North Salt Lake funded the Beck Street Reclamation Framework and Foothill Area Plan (Dames and Moore, 1997). Lakeview and other operator/landowners participated in that planning process, but it has not been formally adopted by SLC.

This NOI includes elements of the two previous plans and the Development Agreement, however it also includes some differences that reflect Lakeview's current plans. As needed, other binding agreements such as the Development Agreement will be renegotiated after the large mining permit has been obtained.

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**Notice of Intention
to
Commence Large Mining Operations
Lakeview Rock Products, Inc. Beck Street Quarry**

This NOI is submitted to the Utah Division of Oil, Gas and Mining in compliance with part R647-4-103 of the Utah Minerals Reclamation Program.

**1.0 Owner/Operator Information
R647-4-104**

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LYNN PACE ON ALL SUBMITTALS

The operator responsible for the mining operations and reclamation of the site is:

Lakeview Rock Products, Inc.
P.O. Box 540700
Salt Lake City, UT 84054

The surface landowner & mineral owner of all land to be affected by the operations is:

Hughes and Hughes Investment Corporation
P.O. Box 700
North Salt Lake, UT 84054

The representative for Lakeview Rock Products is:

Russell A. Larsen, Vice President - Excavation Division
801-292-1411

Mining and processing would take place on lands owned in fee by Hughes and Hughes Investment Corporation, which owns Lakeview Rock Products, Inc. This is a corporation registered to do business in the State of Utah under Business License #: 738483-0142.

Adjacent landowners include the following:

Name: Mary Clarke
Address: P.O. Box 651643, SLC, Ut. 84165-1643
Name: Robert M. Anderson
Address: 50 So. Main St. Suite 1600, SLC, Ut. 84144-0340
Name: F. Douglas Duehlmeier Trust
Address: 1926 Ea. Orchard Dr. SLC, Utah 84106
Name: Granite Construction Company
Address: 1000 No. Warm Springs Rd., SLC, Ut. 84116

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Name: Utah Department of Transportation Commission
Address: 4501 So. 2700 W. SLC, Ut. 84114-1200
Name: North Salt Lake Corporation
Address: 20 So. Highway 89, NSL, Ut. 84054
Name: Staker & Parson Companies
Address: P.O. Box 3429, Ogden, Ut. 84409-1429

All of these adjacent landowners have been notified.

2.0 Project Location and Access

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Lakeview's Beck Street Quarry operations are located within T 1 N, R 1 W, Sections 13 and 14, SLBM, in northern Salt Lake County and Southern Davis County (Figure 1). Adjacent property owners are shown on Figure 2. The Beck Street Quarry is located adjacent to Beck Street (U.S. Highway 89), which is maintained by the State of Utah. Vehicle access to and from the operations area is via Beck Street, connecting to I-15. These operations are ideally located to provide the basic rock materials and related products necessary to support the continuing growth and related construction needs of Salt Lake City and surrounding areas.

Access to upper benches and the eastern portion of the property on the Bonneville Bench is via a private road on the adjacent Staker property, located to the south of the Lakeview operations. Lakeview uses this road with Staker's approval. A barbed wire fence is in place across a portion of the eastern property line.

The Beck Street operations area is 98 acres including property in North Salt Lake City, Davis County; and adjacent property to the south in Salt Lake City, Salt Lake County. The North Salt Lake portion is zoned Highway Commercial (CH) (a strip adjacent to Beck Street) and Residential (R-12). A conditional use or non-conforming use permit is not required for the portion of Lakeview's operations that are located in Davis County. The Salt Lake City portion of the operations area is zoned for Extractive Industry (EI). Lands on the bench above the Lakeview Quarry are zoned as Open Space (OS).

Lakeview has recently acquired a portion of the Mary Clarke & Duehlmeier property to the east of their current operations area. With this addition, the total property is 109 acres. Of this, 11.2 acres on the upper bench are zoned as Open Space and will not be affected by the mining operation.

All internal access roads used during production for the remaining life of the operations will be within the final pit limit configuration, and, therefore will be eliminated as production progresses. No internal access roads will remain, so none will require reclamation.

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3.0 Maps, Drawings, and Photographs R647-4-105

The maps included in this document are those required under R647-4-105 and show: USGS 7.5 minute topography; property boundaries; access routes; existing and proposed impact areas within the permit area; existing and proposed surface facilities; and water resources. Cross sections have been prepared showing the quarry after mining and following final reclamation contouring. The cross sections, and a plan view showing their locations, are included as Figure 4.

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4.0 Operation Plan R647-4-106

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INSERT FIGURE 1¶

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4.1 Type of Mineral to be Mined

The material to be mined is unconsolidated alluvium, conglomerate, and consolidated carbonate rock. Rock products from the operations would be used in off-site transportation facilities, and heavy industrial, commercial, and residential construction.

4.2 Type of Operations to be Conducted

The Beck Street Quarry property consists of approximately 109 acres. Within this, approximately 83 acres have been directly disturbed as part of the mining operations. Approximately 11.2 acres along the eastern property boundary are - and will remain - undisturbed as a setback area necessitated by zoning. The area of active and proposed mining covers nearly 98 acres.

Lakeview uses an open-face extraction method. In this system, a horizontal advance is made into a hillside, usually at several elevation levels. The upper level material is pushed or conveyed to subsequent lower levels until arriving at the processing level which is often the original grade level. After processing, the products are stored in piles until transported off-site by trucks. Mining slowly advances upslope until reaching an elevation at which the desired rock unit is topped. At that time, final mining focuses on developing a bench and highwall system, starting down from the upper-most bench. At the conclusion of mining, a series of benches and interim highwalls remain. The overall angle of this series of benches will normally range from 40 to 60 degrees from horizontal. The overall slope of the most extensive sections of final highwall will range from 45 degrees to 52 degrees, with an average slope of 49 degrees.

Operations include the following sequence of activities (RPI, 1995):

1. The unconsolidated surface material is pushed over the crest of the existing highwall, recovered at the toe, and transferred by front-end loader to the crushing and screening equipment.

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2. When necessary, the exposed rock is blasted in order to allow its removal from the rock face.
3. The broken rock is then transported by front-end loader or mine trucks to the hopper feeding the aggregate production circuit. Production equipment includes screens, crushers, and conveyor belts. Resultant products from this system currently include:

Bankrun
Cobble
Gravel
Roadbase
Sand

Depending upon future demand, products could change from the above-listed. All mined material is product; there are no process waste materials generated.

4. Water needed for the operations comes from a spring located on the eastern edge of the Staker-Parsons property to the south of the Beck Street Quarry. It is stored in tanks located near the production facilities.
5. There are no tailings facilities, storage ponds, sediment ponds or water treatment ponds. There is no water discharged from the property, thus no Utah Division of Water Quality permits are needed.

4.3 Disturbed Area

All of the materials recoverable from within the property boundaries are considered to be saleable. The total acreage to be disturbed when mining is complete is nearly 98 acres. This includes all of the Lakeview property with the exception of the setback area along the east on the Bonneville Bench, circumscribing the final highwall. This setback area (approximately 11.2 acres) has not been zoned for extraction and provides a buffer between the mined area and the adjacent undisturbed properties to the east.

The final pit bottom within the permit area will encompass approximately 56 acres. This entire area will be reclaimed to the extent that it will be stabilized and prepared for post-mining land use as a light industrial or business development site. The reclaimed pit floor will include a catch basin or basins located at the base of the highwall to catch any rockfall and to retain storm water. The final highwall area will encompass approximately 42 acres. Figures 3 and 5 show the current and final mine configuration.

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Figure 5

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4.4 Nature of the Materials to be Mined and Production Rates

The material to be mined is unconsolidated alluvium, conglomerate, and consolidated carbonate rock. The unconsolidated surface material, which may vary from an average depth of less than 5 feet to a maximum of 100 feet, is residual weathered alluvium, conglomerate, and carbonate. Both the consolidated rock and the unconsolidated surface material are considered to be saleable product.

Lakeview's Beck Street Quarry operations are proposed to continue for approximately 50 years. Approximately 1,150,000 tons of rock were mined at this site during 2004. The total volume that is available to be mined from 2005 through the life of the mine is approximately 70 million tons, depending upon market conditions. The average production rate from the past operations is between approximately 500,000 to 1,150,000 tons per year, and the maximum production from the future operations is not expected to exceed about 2.1 million tons per year (based upon the current Division of Air Quality approval order cap).

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Recently, Lakeview has been mining in the higher elevation portions of the quarry. Over the next five years, development is anticipated to continue much as it is currently.

4.5 Existing Soil Types

The Soil Survey of Salt Lake Area, Utah (1974) lists the property as being in one or two miscellaneous land types: gravel pits where mining had already occurred at the time of the survey, or stony terrace escarpments. The latter was characterized as being deep, well-drained, and stratified, with stones and cobblestones comprising the majority of the material volume. Runoff was listed as medium to rapid, and hazard of erosion as high.

A small amount of topsoil is stockpiled on the property; small piles of soil were formed on the upper bench by the placement of a berm. These soil piles have revegetated with volunteer species, which protects them from erosion. They are not in the vicinity of any watercourses, nor are they located in or near any active working areas; thus they are not subject to contamination or disturbance. Signs labeled "TOPSOIL - DO NOT DISTURB" will be placed on the soil piles. These soil materials will be used for reclamation of the highwall safety berm and the upper road spur upon final reclamation. These soil piles will be checked periodically for invasions of Utah State-listed noxious weeds, and evasive action taken if necessary.

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4.6 Plan for Protecting and Redepositing of Topsoils

There are approximately 12 acres of relatively undisturbed ground in the area of proposed new mining; however the majority of this area contains steep slopes which make it nearly impossible to salvage topsoil. No topsoils will be salvaged or stockpiled from the areas proposed for mining.

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The berm constructed above the highwall would be constructed from adjacent materials, such that a trench/berm system is created. The layer of topsoil material on the surface in the area of the proposed ditch/berm system would be gathered to a depth of approximately 12 inches at the time the berm is constructed. This soil would be stored temporarily adjacent to this narrow corridor, and used for reclamation of the berm and road spur. In addition, the small existing soil piles will be used to supplement the soil salvaged from the trench/berm footprint in order to reclaim the berm and road spur.

4.7 Existing Vegetative Communities and Cover Levels, Revegetation

Under R647-4-106 (7), the operations plan must provide a description of existing vegetative communities and cover levels, sufficient to establish revegetation success standards at 70% of pre-mining vegetative cover. Vegetation cover occurs on very little of the Beck Street Operations area. Within the property boundaries, the vegetative cover has undergone extensive disturbance due to past mining operations.

The Soil Conservation Service (now Natural Resources Conservation Service) has classified the range site in this area as Upland Stony Loam (USDA, 1974). This range site occurs on high lake terraces, alluvial fans, and foothills in the Upland climatic zone. Potential native vegetation consists of approximately 55% perennial grass, 15% forbs, and 30% shrubs.

Patchy areas of vegetation on the site include species such as rabbitbrush, Louisiana sage, snakeweed, sunflower, thistle, needle & thread grass, brome grass, and cheat grass. The setback area along the east property line is an open grassy area, dominated by wheatgrass with some snakeweed. Mesic draws east of and above the operations area are dominated by scrub oak.

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Species lists were compiled by RPI in 1995. Additional vegetation field surveys were conducted in July 2004. Many of the species were the same as those listed in the 1995 report. The July 2004 species list follows. The vegetation survey report is included as Appendix B. The survey report includes a table that provides a summary of life forms and non-vegetative cover measured during the field survey. Excluding the category listed as weedy species, the summary table shows that vegetative cover ranged from 15 to 47 percent in the individual quadrats, and averaged 34 percent.

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The final surface will include a 56-acre fairly level pit floor adjacent to Hwy. 89, and a series of highwalls which will be stabilized as described in R647-4-111 (7).

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A variance from the 70% vegetative cover following reclamation is being requested (Section 8.0). Instead, for the pit floor, the success standard of 60% is requested; using the 34% cover of desirable vegetation as measured in 2004, this would equate to a success standard of 20.4.

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Species List

Scientific Name	Common Name	Relative Abundance
Shrubs, Trees and Sub-trees		
<i>Acer negundo</i>	Boxelder	Only in mesic draws
<i>Acer grandidentatum</i>	Rocky Mtn. maple	Only in mesic draws
<i>Artemisia ludoviciana</i>	Louisiana sage	Common
<i>Artemisia tridentata</i>	Big sagebrush	Rare
<i>Celtis reticulata</i>	Netleaf hackberry	Only in mesic draws
<i>Chrysothamnus nauseosus</i>	Rubber rabbitbrush	Common
* <i>Gutierrezia sarothrae</i>	Broom snakeweed	Common
<i>Rhus glabra</i>	Smooth sumac	Only in mesic draws
<i>Rhus trilobata</i>	Squawbush	Rare
<i>Ulmus pumila</i>	Siberian elm	Rare
Forbs		
<i>Allium acuminatum</i>	Tapertip onion	Rare
+ <i>Ambrosia tomentosa</i>	Skeletonleaf bursage	Abundant
+ <i>Asclepias speciosa</i>	Common milkweed	Uncommon
<i>Astragalus utahensis</i>	Utah milkvetch	Uncommon
<i>Berberis repens</i>	Oregon grape	Rare
<i>Calochortus nuttalli</i>	Sego lily	Occasional
+** <i>Cardaria draba</i>	Whitetop	Common
<i>Castilleja chromosa</i>	Desert paintbrush	Rare
+* <i>Chenopodium berlandieri</i>	Netseed lambsquarter	Abundant
+ <i>Cichorium intybus</i>	Chickory	Uncommon
+ <i>Cirsium undulatum</i>	Thistle (native)	Locally abundant
+** <i>Convolvulus arvensis</i>	Field bindweed	Abundant
+* <i>Crepis capillaris</i>	Bristly hawkbeard	Uncommon
<i>Echinocystis lobata</i>	Wild cucumber	Rare
+* <i>Erodium cicutarium</i>	Storksbill	Abundant
+* <i>Grindelia squarrosa</i>	Curlycup Gumweed	Abundant
<i>Hedysarum boreale</i>	Northern sweetvetch	Occasional
<i>Helianthus annuus</i>	Common sunflower	Common
+** <i>Isatis tinctoria</i>	Dyer's woad	Occasional
+ <i>Lepidium densiflorum</i>	Pepperweed	Abundant
+ <i>Lepidium latifolium</i>	Whitetop	Common
+** <i>Linaria genistifolia</i>	Dalmatian toadflax	Uncommon
<i>Linum perenne</i>	Blue flax	Rare
+ <i>Lygodesmia grandiflora</i>	Showy pink rush	Occasional
<i>Mentzelia laevicaulis</i>	Blazing star	Rare
+* <i>Salsola kali</i>	Russian thistle	Abundant
+* <i>Thlaspi arvense</i>	Field pennycress	Common
+* <i>Tragopogon dubius</i>	Salsify	Common

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+**Verbascum blattaria*
Wyethia scabra

Moth mullein
Rough mulesears

Common
Rare

Grasses

Achnathum hymenoides
Agropyron cultivar ALCAR
Agropyron spicatum
Aristida purpurea
+*Bromus tectorum*

Indian ricegrass
Alcar wheatgrass
Bluebunch wheatgrass
Red three-awn
Cheatgrass

Occasional
Abundant
Occasional
Abundant
Abundant

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+*Bromus japonicus*
Elyhordeum montanenese
+*Elymus elymoides*
Melica bulbosa

Japanese brome
Mountain barley
Squirreltail
Onion grass

Occasional
Rare
Common
Rare

+* *Poa bulbosa*

Bulbous bluegrass

Abundant

*Pseudoroegneria libanotica*XP. *Trachycaulus* (cultivar)
Sporobolus airoides
Stipa comata

Alkali Saskatoon
Needle+thread

Common
Rare
Occasional

* Indicative of past disturbance, increasing in distribution

** Currently listed as a Noxious Weed or New and Invading Weed in Utah

+ Included as weedy species in summary table

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4.8 Depth to Groundwater, Extent of Overburden and Geologic Setting

The Beck Street Quarry operations are located in northern Salt Lake County and southern Davis County, between Highway 89 and the Wasatch Cache National Forest boundary, in the steep west-facing foothills of the Wasatch front.

Depth to Groundwater

The shallow water table is expected to be approximately 20-25 feet below the pit floor area, based upon the nearby Staker well, as reported in the 1995 plan (RPI, 1995).

Extent of Overburden Material

The remaining material to be mined at the Beck Street Quarry through life of mine is about 70 million tons, depending upon market conditions. All material is processed and saleable.

Geologic Setting

The property is located on a geomorphic feature called the Salt Lake Salient. The feature is the result of the termination of two major fault segments of the Wasatch Fault Zone. The Warm Springs Fault is one of the fault segments and is a late Tertiary structural feature. The fault brought Paleozoic carbonate rocks to the surface and exposed them in the footwall of the fault, where they are presently providing an important resource to the local rock aggregate business.

The Paleozoic rocks range from Cambrian to Mississippian in age and contain two major unconformities. Tertiary conglomerate and volcanic rock unconformably overlie the block of Paleozoic rock. The Tertiary sedimentary rock and the Paleozoic carbonate rock have been tilted during their tectonic history such that they generally dip to the southeast and strike to the northeast. The final sedimentary deposits came during the Quaternary and chiefly in the Pleistocene epoch. These deposits are lacustrine in origin left from Lake Bonneville. The lake deposits consist of layers of silt, sand, and gravel, and are generally flat lying.

The Warm Springs Fault created a zone of intense fracturing near the fault, decreasing in intensity to the east, away from the fault. This fracturing enables extraction of rock without blasting in many areas. The fracturing also provides a conduit for hot groundwater in some locations, hence the name of the fault.

Geology of the Pit Area

The geology of the nearby Staker pit was described in 1984 by M. C. Godbe Consultants, Inc. and reported in Lakeview's 1995 plan (RPI, 1995) as being applicable to Lakeview's pit. The following is taken from the 1995 plan, which drew from Godbe's 1984 report:

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The final surface will include a 56-acre fairly level pit floor adjacent to Hwy. 89, and a series of highwalls which will be stabilized as described in R647-4-111 (7). ¶

¶
A variance from the 70% vegetative cover following reclamation is being requested (Section 8.0). Instead, for the pit floor, the success standard of 60% is requested; using the 34% cover of desirable vegetation as measured in 2004, this would equate to a success standard of 20.4.

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The adjacent Staker pit is underlain by a section of upper Cambrian dolomites within the S½ SE¼, and S½ SW¼ Section 14 also N½ NE¼, Section 23, all in T1N R1W, Salt Lake Base Meridian (SLBM).

The unit consists of thin to medium bedded, dark grey, blue-grey weathering, fine grained dolomitic rocks. The main body of rock strikes NNE through NE and dips from 23 degrees through 43 degrees SE. The exception is found in the northwest portion of the property where the strike is N 70 degrees W and dip is 17 degrees south near the escarpment of the Warm Springs-Beck Street fault.

At the top of the upper Cambrian unit, an erosional unconformity represents a non-depositional interval of Ordovician, Silurian, and lower Devonian rocks.

Overlying the unconformity are sediments of mid-Devonian rocks referred to as Stansbury formation. It consists of red and yellow shales, siltstones, calcareous shales, white to light brown quartzites and minor sandstones.

The Stansbury formation here is approximately 350 feet thick stratigraphically. In the southeast corner area of the property, the bedding strikes N 20 degrees E and dips 32 degrees southeast.

Along the south property line, common with Monroc, Inc., approximately 200 feet west of the southeast corner point, a small east-west ridge line was cut by Monroc exposing a thin section of Tertiary age brown and tan soils. It is suspected that other small ridges composed of this type material, covered by Quaternary alluvium, are present.

Quaternary alluvium consists of soil, gravel, and boulder sized carbonates, quartzite, igneous and conglomerates derived from Tertiary outcrops east of the subject property. The alluvial cover occurs along the banks of drainages and is comprised of very thin mantles over the solid bedrock where present. This Quaternary cover averages about 5 feet and attains a maximum of 20 feet...

The attitude of the bedding is such that in most of the pit the dip of the bedding planes are away from the pit wall, adding stability to the highwall.

4.9 Proposed Location and Size of Overburden Piles

The overburden material is recovered and processed through the aggregate production circuit. Finished sizes are sold as product. There is no overburden disposal or stockpiling. There is no waste rock created which requires disposal or storage. After processing, the products are stored onsite in piles until transported off-site by trucks.

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5.0 Hole Plugging Requirements

R647-4-108

All exploration holes drilled by Lakeview Rock Products have been plugged according to the requirements of R647-4-108. Future drill holes, should there be any, would be plugged according to the same requirements. Drill holes would not be left unplugged for more than 30 days unless approved by UDOGM. There are no monitoring wells at Lakeview's Beck Street Quarry.

6.0 Impact Assessment

R647-4-109

6.1 Water Resources

6.1.1 Surface Water

Lakeview's existing and proposed pit development and related operations are located in the Jordan River drainage basin, on the east slopes of the Salt Lake Valley. Annual rainfall averages between 16 and 25 inches (RPI, 1995). Mining operations have not intercepted any stream channels. Mining has occurred on slopes between Lime Canyon to the south and an unnamed channel to the north (Figure 2). There is only minimal upgradient watershed area along the Bonneville Bench that could contribute runoff to the property area.

Watershed runoff modeling using standard Curve Number methodology developed by the former Soil Conservation Service was done for the watershed area above the Lakeview property in 1995 (RPI, 1995). While their specific results are no longer applicable to the project, the same methods and general assumptions were used herein to predict runoff volumes that would report to the catch basin(s) upon final reclamation. Using a 100-year, 6-hour precipitation depth of 2.2 inches, a Curve Number of 71 for the undisturbed bench area, and a Curve Number of 94 for the disturbed area, runoff is estimated to be approximately 13 acre-feet. The large majority of this runoff would be generated from the disturbed areas.

Drainage down the highwall face is restricted to precipitation falling directly on the face. During operations, this precipitation is primarily trapped on the benches where it infiltrates or evaporates; some amount may course down to the next bench level. Observations indicate that this drainage is not concentrated or confined. Any runoff that continues to the base of the highwall stays at the base, as this is the low point of the pad area, until it infiltrates or evaporates.

As shown on Figure 2, there are no stream channels or watercourses intercepted by the pits or that traverse the property. An area of upgradient hillslope could contribute occasional runoff to the property, however most appears to infiltrate before reaching the highwall. This area is shown on Figure 2, and was included in the watershed calculations described above. Property drainage primarily results from precipitation

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falling directly on the property. Water produced on steep highwall and bench areas ends up on the eastern portion of the pit floor, where it ponds, evaporates, or infiltrates. Water produced elsewhere on the generally flat, but gentle east-grading, pit floor is contained within the property and similarly ponds, evaporates, or infiltrates. During the occasional wet periods, the water does not hinder Lakeview's operations, and in fact is seen as an advantage as it minimizes dust production. No attempts are made to route this water through, around, or within the property, other than maintaining the overall grade of the pit floor to the east toward the base of the highwall and away from Beck Street. Therefore, there are no existing ditches or ponds.

As operations continue over time, this scenario will continue, with the only changes being a continual enlargement of the flat pit bottom versus the steep highwall slopes, and the addition of catch basins upon final reclamation, described in more detail in Section 6.4.2 .

There are no known springs located within the property boundary. A spring to the south on the Staker-Parsons property, known as Lime Canyon Springs, provides dust control and wash water to Lakeview as well as other mine operators in the area. Water Rights held on the spring include 57-8409, 57-8946, and 57-10138 (Utah Division of Water Rights, 2003). Water Right 57-8409 is held by Herm Hughes and Sons, Incorporated, and Lakeview's water is supplied from this right. Two other springs are located within a half mile east and northeast of the property, and are subject to water rights 57-71 and 31-2387.

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6.1.2 Ground Water

The groundwater system of the Salt Lake Valley can be divided into three general occurrences: 1) confined artesian aquifer (principal), 2) deep unconfined aquifer which lies between the confined aquifer and the mountains, and 3) shallow unconfined aquifer lying above the confined aquifer (Hely, 1971). The boundary of the shallow unconfined aquifer is generally drawn at the break in slope along the Salt Lake Salient (RPI, 1995).

East of the Warm Springs fault is the local recharge area for the principal aquifer. This area is chiefly bedrock (Paleozoic carbonate, and Tertiary conglomerate) with a thin layer of Quaternary sediments overlying the bedrock. The foothills east of the operations serve as part of the recharge area for the groundwater in the valley as well as several minor perched aquifers. The perched aquifers consist chiefly of Tertiary deposits and are east of the operating limit of the planned pit development. Perched aquifers provide small flows as springs in the foothills. These flows have been used for stock watering and culinary supplies, but presently serve as industrial water.

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Another local source of groundwater is the Warm Springs Fault. These waters are generally hot and high in total dissolved solids. Beck's Hot Spring is located in the SW¼ SE¼ of Section 14, T1N R1W, SLBM and Wasatch Springs is located in the NE¼ of Section 25 T1N R1W, SLBM. These major springs as well as numerous small seeps and fumaroles lie along the trace of the Warm Springs Fault. These waters are distinct chemically from groundwater in the shallow and principal aquifer and the temperature is well above other waters found in the valley. These facts lead to the conclusion that there is a thermal source at depth along the Warm Springs Fault which increases the temperature and also adds dissolved solids to the waters. Two wells in Section 26 T1N R1W show a significant reduction in total dissolved solids relative to the hot springs indicating no mixing of Warm Springs Fault waters with the adjacent shallow groundwater aquifer (RPI, 1995).

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The flat area along Beck Street is not a significant recharge area to the principal aquifer because the shallow aquifer (separated by an underlying confining layer) apparently abuts (RPI, 1995) the Warm Springs Fault and the fault apparently is a barrier to horizontal movement of waters into the shallow aquifer.

Groundwater Quality

Groundwater quality from sources underlying the Beck Street Quarry can be expected to be similar to that reported for Staker in the 1995 Reclamation Plan (RPI, 1995).

The shallow aquifer underlying Lakeview's property has not been specifically designated by the State of Utah, according to the Division of Water Quality's website. However, it has been the subject of numerous study reports prepared by the State of Utah (Hely, 1971; Waddell et al, 1987; Lambert 1995), which characterize the aquifer as being of limited use due to slow yields and poor quality. The State Water Plan for the Jordan River Basin (Utah Division of Water Resources, 1997) echoes this characterization.

The Utah Division of Water Quality has indicated to Lakeview that a Ground Water Discharge Permit is most likely not needed for their facility, as it is covered under the Permit-by-Rule, de minimus, category at R317-6-6.2.A.25. Lakeview is in the process of providing information to that agency to further verify their status.

Similarly, Lakeview is communicating with Utah Division of Water Quality regarding the need for a UPDES Storm Water discharge permit. Should one be required, a copy of the resultant Storm Water Pollution Prevention Plan will be provided to UDOGM and will be retained on site.

In any case, Lakeview confines storm water runoff to their own property, generates no wastewaters, conducts no equipment or aggregate washing, and properly manages any potential contaminate spills (primarily oil and grease) to provide for protection of surface water and groundwater quality.

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6.2 Wildlife Habitats and Special Status Species

Wildlife Habitats

The majority of the current operations area is disturbed and essentially barren of vegetation. Habitat for wildlife is limited in the operations area. The slopes and drainages upslope of the operation, and above the property, are sites of grass/shrubs, with scrub oak concentrated in the draws. According to the Utah Division of Wildlife Resources Conservation Data Center, the project area contains habitat for blue grouse as well as for mule deer. The scrub oak areas above the property are likely valuable deer and elk winter range, due to the continued decrease of available winter range along the Wasatch Front. Future residential development on these benches is likely to increase the wildlife/ resident conflict in heavy snow years with more wildlife attempting to access lower elevation browse areas. Magpies and chukar were observed during a November 2003 site visit. None of these species are Federally or State-listed species.

Special Status Species

No TES species have been recorded on or near the operations area. Due to the overall lack of vegetation and habitat onsite, threatened, endangered or sensitive (TES) plant or wildlife species would not likely occur in the area. According to correspondence received from the U.S. Fish and Wildlife Service in response to a request for threatened, endangered, and sensitive species information on an area including Section 13, T1N R1W, SLBM, the following species may occur in the area of influence of the proposed action:

bald eagle (<i>Haliaeetus leucocephalus</i>)	Threatened
western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	Candidate

These species are also included on the County Lists of Utah's Federally Listed Threatened, Endangered, and Candidate Species for both Davis and Salt Lake counties (Utah Division of Wildlife Resources 9/25/03).

Bald eagles typically nest in large trees, primarily cottonwoods and conifers, although they have also been known to nest on projections or ledges of cliff faces. There is no nesting or roosting habitat on or near the property. Bald eagles are not expected to occur in the area and would not be impacted by the continuation of mining in the operations area.

The **western yellow-billed cuckoo** is a bird that occurs in cottonwood-willow forests in the west. Populations in Utah have been historically noted to be uncommon to rare along river bottoms. Due to the lack of vegetation or riverine habitats in the operations area, this bird would not be expected to occur and would not be impacted by continuation of mining in the operations area.

According to the Utah Natural Heritage Program database Information Manager (E-mail correspondence, Dec. 2003), the long-billed curlew has a recent record of occurrence in the area. This species is included on the *Utah Sensitive Species List*. The long-billed curlew is a fairly common summer resident and migrant in Utah, especially through the central and more northern valleys. In Utah, long-billed curlews nest around the Great Salt Lake. They require short grassy fields and abundant vertebrate prey.

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There is no habitat available for this sensitive species in the operations area.

6.3 Soils

There are topsoils remaining on the recent property added to the Lakeview operations area. However, topsoils from this area will not be salvaged or stockpiled due to prohibitively steep slopes. Topsoil piles formed on the upper bench during construction of a berm are described in Section 4.5.

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6.4 Slope Stability, Erosion, Air Quality, Public Health & Safety

6.4.1 Slope Stability

Two slope stability analyses covering Lakeview's property were performed in the 1990s: one in 1995 by AGRA (now AMEC), included in the RPI 1995 reclamation plan; and the other in 1997 by Dames and Moore in the Beck Street Reclamation Framework & Foothill Area Plan. The earlier plan report states that a compound slope, with an overall angle of 50 degrees would be stable with a 1.3 factor of safety, and the latter plan found a 60 degree slope to be stable. The reliability and accuracy of the geologic assumptions, including rock competency, used in these analyses were at issue.

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An additional study was recently conducted by Intermountain GeoEnvironmental Services, Inc. (IGES). The IGES Summary Report on Site Observations and Preliminary Engineering Analyses (October, 2004) concluded that the lowermost rock unit comprised of higher quality limestones can be reasonably steepened to 60 degrees. The upper lithologies require a combination of slope flattening and benching in order to achieve acceptable levels of stability. This report is attached as Appendix C.

The proposed final highwall design reflects the IGES study, with a compound slope of 60 degrees in the lower limestone, 50 degrees in the conglomerate, and 40 degrees in the upper gravel layer. The compound slope has a minimum 1.27 safety factor and an overall slope ranging from 45 degrees to 52 degrees through the most extensive sections (640 to 850 feet horizontal) of highwall.

Additionally, since the actual design highwall may be reached many years into the future, Lakeview agrees to update the engineering review of rock quality every five years, and understands that overall planned pit slopes may need to be revised in the future depending upon these additional slope stability studies.

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6.4.2 Runoff and Erosion Control

From an operational standpoint, Lakeview does not find runoff to be excessive or to require ditching, routing or other structural controls. Neither storm water runoff, nor eroded sediments will leave the property. Lakeview applies various best management practices, such as proper waste disposal, spill cleanup, oil handling, and diesel storage, which minimize impacts to the water quality of on-site storm water.

Drainage down the highwall face is restricted to precipitation falling directly on the face. During operations, this precipitation is primarily trapped on the benches where it infiltrates or evaporates; some amount may course down to the next bench level. Observations indicate that this drainage is not concentrated or confined. Any runoff that continues to the base of the highwall stays at the base, as this is the low point of the pad area, until it infiltrates or evaporates.

Upon reclamation, a similar situation will continue, with perhaps a greater percentage of the precipitation remaining on the benches if revegetation efforts are successful. Any runoff that continues to the base of the highwall would be retained within the catch basins to be constructed in this area. During reclamation, final grading of the pit floor would promote drainage toward the east and into the catch basins. This drainage consists only of that precipitation directly falling on the pit floor. The resultant flows would be low velocity, dispersed overland flow as opposed to channel-type flows.

During final reclamation the pit floor will be graded generally eastward toward the catch basins, as shown on the Final Pit Plan map. Grading is - and throughout mining, will continue to be - in this direction so as to prevent runoff from draining westward off the property. Therefore, any required final grading is expected to be minimal and restricted to localized correction of the overall slope. Surface preparation after final grading will consist of the addition organic matter, ripping the compacted pit floor, and seeding the pit floor and setback area.

Catch basin design criteria are to be similar to that given in RPI (1995); surety includes those structures. The Final Pit Plan map shows the catch basin locations. Figure 6 shows a general schematic.

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6.4.3 Air Quality Impacts

The operations will result in low levels of air emissions, mostly fugitive dust. Water from onsite sources is utilized in active mining areas for dust control. Lakeview Rock Products has obtained approval to operate from the Utah Division of Air Quality according to Utah Air Conservation Rules, under Approval Order AO #DAQE-IN0439005-03. Compliance with these regulations assures compliance with air quality standards.

6.4.4 Public Health & Safety

All operations are conducted in compliance with applicable Mine Safety and Health Administration (MSHA) safety regulations. Health and safety measures that are employed include the following:

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- 1) Access to the active site would be controlled, and gates at the main entrance point to the lower quarry. Locked gates and No Trespassing and Warning signs would be posted and maintained at all access points to the quarry.
- 2) A fence is in place along the east property line to hinder access above all active highwalls. This fence would be continued across the northern half of the eastern property line. Earth barriers/ ditches would be constructed to prevent vehicle access to the highwall areas from the upper benches, and these would be maintained.
- 3) Blasting practices are conducted in accordance with state and federal rules and in a manner to prevent fly rock outside the property limits and to assure compliance with the dust opacity limitations of the Division of Air Quality.
- 4) Trash, scrap metal, wood, buildings, and any extraneous debris attributed to the active mining will be removed and properly disposed of within one year of cessation of operations.
- 5) Any drill holes not used for blasting purposes will be plugged and capped according to the requirements of UDOGM.

6.5 Proposed Mitigation Measures

If residential development occurs east of the pit, safety requirements could increase for people as well as wildlife. The surety calculation includes the addition of approximately 2,900 feet of new T-post and three-strand barbed wire fence to tie into the existing fence along Lakeview's east property boundary. Lakeview Rock Products will work with the future developers and land owners of adjacent property to insure the site is sufficiently fenced to protect both parties; the result of the negotiation may be a different type of fence than has been assumed herein.

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7.0 Reclamation Plan

R647-4-110

7.1 Land Use

Historic & Current Land Use

The Beck Street Quarry area has been used historically for mining and aggregate processing operations. Prior to mining, the area also provided habitat for wildlife, and range for domestic livestock. No grazing has occurred in recent times. The Bonneville Shoreline trail, following the eastern shore of ancient Lake Bonneville is proposed for construction along the area east of the Lakeview property. This trail would provide access to recreational opportunities and open space, which is the proposed future use designation of a portion of the lands above the quarry.

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A previous review of the State Historic Preservation Office (SHPO) files revealed no known cultural resources or historic properties in the area (RPI,1995). If previously undocumented cultural resource sites are encountered during the course of the operation, activities will cease in the affected area and the SHPO will be notified.

Currently, the Beck Street Quarry area is being used for mining and associated crushing, handling, and loading operations. Rock aggregate products of various sizes are being produced and transported offsite.

Post Mining Land Use

The proposed post-mining land use on the pit floor created by the removal of rock aggregate products will be light industrial or business park development. On the east edges of the property above the highwall and safety berm/ditch, the area will remain as it is currently (vegetated and blending with surrounding lands along the Bonneville Bench). The proposed post-mining land use of these eastern areas will be as open space or wildlife habitat. The lands east of Lakeview's property line are proposed by others for open space, and limited residential development.

According to current Salt Lake City zoning, the local environment in the Beck Street corridor near the Lakeview quarry is Extractive Industry, Light Industrial, and Business Park. Salt Lake City has established plans for future land use for the Extractive Industry areas in the Capitol Hill Community Master Plan, adopted November 9, 1999. The Lakeview quarry is within an area designated as 'Transitioning to Business Park' on the Capitol Hill Community Future Land Use Map. The purpose of the Business Park District is "to provide a nuisance free, attractive environment for modern offices, light assembly and warehouse development." Salt Lake City's adopted Master Plan(s) and zoning requirements show the city's intentions to create a business park development with high image business, office, and industrial uses.

The northern part of Lakeview's property is within the corporate boundaries of the City of North Salt Lake. The portion along Beck Street is designated to be in Zone CH (highway commercial). Section 11.1.2 of the City of North Salt Lake's Title 12 Land Use Development and Management Act states that this zone is meant to provide "...activities dependent upon or catering to thoroughfare traffic and the traveling public..."

The Beck Street quarries are valued as the last two remaining sources of aggregate materials in the urban Salt Lake area. The Lakeview property, located between Beck Street and the Wasatch foothills, is expected to be highly valuable property, and under future economic conditions could be at a premium for development. Thus, it is expected that now, or under post-mining conditions, the property could be easily sold for materials, or for development.

At the close of mining, the pit floor will be assessed for growth potential, ripped, and seeded with a grass/ forb mix to promote site stability, and provide dust suppression

and weed control during a potentially short timeframe subsequent to mining and prior to development. Lakeview intends to comply with both cities' requirements to maintain the property as safe and nuisance-free for the public until such time it is sold or developed.

7.2 Extent of Reclamation

Access Roads

All on-site access roads utilized during production for the remaining life of the operations will be within the final pit limit configuration, and, therefore will be eliminated as production progresses. A short (<1000 feet) spur of roadway on Lakeview's property on the eastern bench area will be reclaimed coincident with the construction/reclamation of the safety berm. This road is a continuation of a Staker & Parson access road and is used occasionally by Lakeview to access the upper, eastern portion of the property. No other access roads will remain which would require reclamation. Offsite roads not owned or controlled by Lakeview will not be reclaimed under this reclamation plan.

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Safety Berm

A safety berm would be constructed at the top edge of the highwall, utilizing materials on the east & north sides, creating a trench/ berm system to reduce access to the highwalls. The berm constructed above the highwall would be constructed from adjacent materials, such that a trench/berm system is created. The layer of topsoil material on the surface in the area of the proposed ditch/berm system would be gathered to a depth of approximately 12 inches at the time the berm is constructed. Four-foot high safety berms will be constructed on the upper/east sides of the pit. The equipment assumed to be used is a trackhoe or a dozer. The estimate includes removing 12 inches of topsoil from the 24-foot wide, 6,112-foot long berm/trench footprint area; constructing the 12-foot wide (at base), 4-foot high berm from adjacent, in-place material; and replacing the topsoil over the berm surface.

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This soil would be stored temporarily adjacent to this narrow corridor, and used for reclamation of the berm.

Berms would be constructed at each end of each bench.

Highwall Benches

As each highwall bench is completed, before moving to the next lower level, a small berm will be constructed along the outer edge using in-place materials. For the highwall benches, where seeding will be completed on a one-time basis as final surfaces are exposed, the in-situ material will be scarified and used as-is to provide cover for the seed. A mix of introduced and native rangeland species will be broadcast seeded on each bench. This, by necessity, will be a one-time attempt to revegetate each bench in order to provide some protection from noxious weeds and from erosion. No subsequent vegetation surveys will be attempted and no success standards will be applied to these benches. Over time, it is expected that slope raveling will contribute fines that will provide additional cover and water holding capacity.

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Pit Floor

Upon completion of mining and prior to reclamation, 10 representative areas (approximately 5 acres each) of the pit floor will be sampled for factors to determine the floor's ability to support growth. Depending upon the results of those tests, amendments will be added as necessary to provide an acceptable growth medium. For surety purposes, it is assumed that organic mulch will be incorporated to the pit floor surface material prior to ripping and seeding. No topsoils would be available for salvaging; no topsoils would be stockpiled for use in reclamation of the pit floor.

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Catch Basins

Two catch basins will be constructed at the base of the highwall along the eastern edge of the pit floor. The purpose will be to trap rocks falling from the highwall and to retain storm water runoff. Such structures are neither practical nor needed during operations. The Final Pit Plan shows the catch basin locations, and Figure 6 shows a general schematic. These catch basins would be constructed with a Cat. D-9.

Any surface disturbances in the setback area would be revegetated. The road spur, safety berm, highwall benches, setback area and the remainder of the pit floor will be seeded during reclamation efforts.

Phased Reclamation

Active operations may be completed in some portions of the Lakeview Quarry while yet ongoing in others (e.g. completion of operations in the northern portion while ongoing in the southern portion). Completed areas of the Lakeview Quarry may be configured for the post-mining land use, and proposed to UDOGM for early reclamation release in preparation for commercial or light industrial development.

7.3 Surface Facilities

No mining-related surface facilities will be left as part of post-mining land use.

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7.4 Deleterious Materials

There are no acid forming or deleterious materials present at this site. Therefore, no deleterious or acid forming material will be left on-site.

7.5 Revegetation Planting Program

At the conclusion of the operations, all trash, oil, fuel, equipment, debris and structures will be removed from the site and the site prepared for reclamation. Rehabilitation and reclamation activities will commence following cessation of operations, and will include the following:

- 1) Any trenches will be backfilled to eliminate safety hazards. No other backfilling is proposed.

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- 2) As each highwall bench is completed, before moving to the next lower level, a small berm will be constructed along the outer edge using in-place materials, and the final bench surface will be scarified and broadcast-seeded according to the seed mix provided below. Timing of the bench seedings will be contingent upon when the final bench surface is exposed, and not restricted to the fall season. This would be a one time seeding as each bench is completed; no measures of revegetation success would be required.

Bench Seed Mix	lbs./acre
Intermediate wheat grass	4.5
Crested wheat grass	4.5
Bluebunch wheat grass	4.5
Four wing saltbush	2
Big sagebrush	0.2
Total	15.7

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Over time, it is expected that slope raveling will contribute fines that will provide additional cover and water holding capacity. No subsequent vegetation surveys will be attempted and no success standards will be applied to these benches. The overall slope angle of the final quarry face would average approximately 49 degrees.

- 3) The topsoil stockpiles on the eastern end of the property, as well as soils salvaged from the footprint of the safety berm/trench area, will be used atop the safety berm and the road spur. No soils or other growth medium will be placed on the highwall benches. Any additional topsoil salvaged from the relatively undisturbed areas proposed for mining will be utilized for reclamation of the upper safety berm and road spur. No topsoils would be stockpiled for use in reclamation of the pit floor.

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- 4) All surfaces to be revegetated will be left in a rough and loosened condition. The safety berm will be uncompacted, and the placed topsoils will be spread to maximize infiltration and reduce runoff. The road spur will be ripped prior to topsoil placement. The highwall benches will be scarified as conditions allow. The setback area and pit floor will be ripped to a depth of 1½ to 2 feet and left in a roughened condition prior to application of organic material.

Seeding of the safety berm, the road spur, and the setback area will be completed in the fall, using the native seed mix provided below. Broadcast seeding will be the most appropriate method over these relatively small areas. The broadcast seed would be raked ¼ to ½ inch into the soil. Manure would be added at a rate of 5 tons (dry) per acre. The following seed mix would be applied in the fall after operations cease:

Berm, Road Spur & Buffer Seed Mix	lbs./acre
Pubescent wheatgrass	2
Russian wildrye	1
Thickspike wheatgrass	2

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Bluebunch wheatgrass	2	
Indian ricegrass	1	
Prairie sandreed	1	
Lewis flax	1	
Palmer penstemon	.5	
Blanket flower	1	
Big Sage	0.25	
Rubber rabbitbrush	.5	
Total	12.2	

5) Natural drainage channels will not have to be re-established because none have been intercepted during operations.

6) **Pit Floor Revegetation Plan:** At the end of mining, and once the pit floor is regraded to drain gently to east, the pit floor materials would be sampled if necessary, to determine their ability to support plant growth. Because of the nature of the pit floor, it is presumed to be adequate for growth, with the possible exception of lack of organics.

The sampling of the pit floor material would be conducted from 10 representative 5-acre areas. ~~One sample of pit floor material would be taken from each 5-acre area and analyzed for factors including: texture, pH, conductivity, CEC, SAR, % organics, Total N, K, and PO4, and acid-base accounting. Based upon the results of this sampling, one of the following is planned:~~

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a) ~~The pit floor would be ripped to a depth of 1½ to 2 feet and drill-seeded with the below seed mix to promote site stability until development occurs. This option assumes no organic material (manure) is needed.~~

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b) In the event that sampling shows it's needed, composted manure at a rate of 5 tons/acre would be added to the pit floor, prior to ripping, to increase its effectiveness as a growth medium. The pit floor would be ripped to a depth of 1½ to 2 feet, to loosen the material and incorporate the organics. It would then be drill seeded with the below seed mix to promote site stability until development occurs. Areas inaccessible to the drill seeder would be broadcast seeded. The soil testing and addition of composted manure have been used in the surety estimate. ~~Any other fertilizers or amendments determined to be necessary would be added as needed, but are not included in surety.~~

~~Deleted: along with the stockpiled topsoil,~~

~~Deleted: The spreading of stockpiled topsoil has been included in the surety estimate.~~

The property owner would monitor for noxious weeds, and would provide weed control measures according to County directives should noxious weeds pose a potential problem.

The pit floor would be seeded for the purposes of stabilizing the site during the interim period prior to development and, providing plant cover that is visually preferable to a gravel layer. A variance is being requested to the standard reclamation standards for this area, as detailed in Section 8.0 below.

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Pit Floor Seed Mix	lbs./acre
Pubescent wheatgrass	2
Russian wildrye	1
Thickspike wheatgrass	2
Bluebunch wheatgrass	2
Indian ricegrass	1
California poppy	.5
Lewis flax	1
White yarrow	.5
Blanket flower	.5
Sainfoin	2.0
Total	12.5

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- 6) Trash, scrap metal, wood, buildings, and any extraneous debris attributed to the active mining will be removed and properly disposed of within one year of cessation of operations.

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8.0 Variances

R647-4-112

The reclamation plans related to the proposed operations indicate that the following variances from the Division of Oil, Gas and Mining are proposed:

R647-4-111 Highwalls

Regrading the highwalls to 45 degrees or less should not be required because the highwall slope has been designed to be stable by utilizing a compound slope including 60 degrees in the solid limestone base; 50 degrees in the siltstone and conglomerate materials; and 40 degrees in the overlying unconsolidated gravel. The overall final highwall slope ranges from 45 degrees to 52 degrees. This compound slope is based upon a minimum 1.27 safety factor (See Section 6.4.1 and Appendix C). The highwalls would not contribute to unstable slope conditions and would not be a safety hazard due to the post-mining limitations on public access. A variance is requested to the 45 degree final highwall requirement. However, it is understood that the variance hinges upon reassessment of slope stability on a five-year interval.

R647-4-111 Topsoil Stockpiling and Redistribution

Topsoil is not readily available in the areas to be newly disturbed by the proposed operations due to steep slopes. However, there is a small quantity of topsoil-like material stockpiled on the upper, east edge of the property. This material will be used to revegetate the safety berm and the road spur, which are located at the same general elevation as the piles. There is not sufficient access to these piles to transport them to

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the lower mine area. Soils from the footprint of the safety berm will supplement these stockpiled soils, again restricted by access to the upper part of the site. A variance is requested to stockpiling of topsoils due to the difficulty of salvaging topsoil from the steep slopes on the approximately 12 acres that are relatively undisturbed. A variance is requested to redistribution of the limited stockpiled topsoils from the upper bench to the pit floor area because of insufficient access.

R647-4-111 Revegetation

Revegetation is proposed for the safety berm, the road spur, the highwall benches, the setback area, and the remainder of the pit floor.

A variance is requested to exclude the highwall benches from reclamation success standards because they would be impractical to meet and impossible to measure.

A variance is requested to modify the pit floor reclamation success standards, due to the proportion of acceptable cover species (versus weedy species) in the existing vegetation, the expected interim/short term nature of the site in an undeveloped condition, and its proposed post mining land use of light industrial or business park development, and the . The purpose of the interim seeding of the pit floor would be to provide stability to the site in a way that looks nicer than gravel, since this is a highly visible site. Instead of the 70% reclamation standard for this interim seeding, a 60% success standard is requested. The success standard of 60% is requested using the 34% cover of desirable vegetation as measured in 2004; this would equate to a cover standard of 20.4 (See Section 4.7). The variance request from the 70% vegetative cover following reclamation is based upon the percentage of non-weed (or acceptable cover) species found in the existing vegetation.

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9.0 Surety

All equipment costs include operating costs, maintenance, service, operator and supervision. These equipment costs include mobilization and de-mobilization. Equipment cost estimates for all operations except ripping were determined using Means Heavy Construction Cost Data, 17th Annual Edition. References to the particular sections of this manual are shown. These cost estimates are supported by spreadsheets included in Appendix D.

9.1 Gates & Signs

Gates are already installed at the southwest and northwest entrances to the operations area. An additional gate is to be installed at the beginning of the access road which leads to the higher elevations. A warning sign will be placed at each gate. Signs would be applied to the topsoil piles on the east bench. Purchase and installation costs for the gate and signs are estimated as follows:

Gate Cost (est.)	\$ 300
Sign Cost)	\$ 310
Labor	<u>\$ 600</u>
Total	\$1,210

9.2 Pit Floor Regrading

The final pit floor will require minimal grading to slope gently to the east. The estimated cost would be \$1,904. This estimate assumes minimal slope correction (one pass) over the entire 56-acre pad area to maintain/correct an eastward grade, using a Caterpillar 16 dozer and/or grader.

Regrading **\$1,904**

9.3 Catch Basin Construction

Two catch basins would be constructed at the base of the highwall as shown on Figure 5. Rockfall areas would be excavated along the portions of the highwall base not occupied by catch basins. A D8 or D9 would be utilized to excavate material according to the catch basin design. The excavated material would be spread evenly on the pit floor to maintain grade.

Catch basins (1.14 acres + 1.48 acres) construction according to Figure 6.

Volume of material to be moved = 42,270 yd³ @ \$1.13/yd. = \$47,765

Rockfall areas

Volume of material to be moved = 18,920 yd³ @ \$1.13/yd. = \$21,380

Total \$69,145

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9.4 Safety Berms

Four-foot high safety berms will be placed on the east and north sides of the pit. Construction of the berms would create a berm/trench system to discourage access to the highwall. The equipment assumed to be used is a trackhoe or dozer. The estimate includes removing 12 inches of topsoil from the 24-foot wide, 6,112-foot long berm/trench footprint area; constructing the 12-foot wide (at base), 4-foot high berm from adjacent, in-place material; and replacing the topsoil over the berm surface.

Bench berms would be constructed at each end of the 15 proposed highwall benches.

Safety berm/trench system (6,112 feet X 24 feet = 5,433 yd³ @ \$6.40/ yd³) = \$34,770

Safety berm/trench footprint topsoil removal & replacement (6,112 feet X 24 feet X moving material twice) = \$25,426

Bench berms (15 benches X 2 berms each X .25/linear foot = \$188

Ref. Means 02315-200-6050

Safety berms Total \$60,384

9.5 Cleanup

There are few buildings, wood, scrap, etc. associated with the proposed Lakeview operations since few of the equipment/buildings are permanent installations. Most equipment/facilities are designed to be portable and easily moved through the use of a tractor trailer combination, or through the use of a tractor only. A front end loader can be used to load any equipment onto flatbed trailers if the equipment does not have it's own wheels. A front-end loader could also be used to excavate and load the portable truck scale.

One building with dimensions of 100 ft length, 70 ft width, and 20 ft height will be demolished at the rate of \$0.27 per cubic foot.

General site cleanup and trash removal is estimated assuming \$75 per acre over the 25- acre area to be cleanup.

Due to the nature of Lakeview Rock Products' business, removal of equipment from sites is a frequent occurrence. Through this experience, Lakeview Rock Products has learned that each piece of equipment costs approximately \$350 to relocate. This cost includes two hours to load the equipment and travel time to and from the pit, and the cost of operating the truck, including an operator. These costs are Lakeview Rock Products' own internal costs. An outside contractor could include up to 15% profit. The total cost per piece of equipment including profit for transporting equipment is \$405.

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The number of trips estimated is: 1) the cone and screen are a single trailer unit, 2) the jaw crusher is a single trailer mounted unit, 3) the 6 radial stackers have their own wheels for a total of 3 trips, 4) 20 conveyors could be loaded on to a single flat bed, for a maximum total of 10 loads, 5) removal of second crusher string, maximum of 10 trips, 6) the scale trailer is a single trip, 7) the scale and miscellaneous equipment is a single trip, 8) crane is a single trip, 9) a bulldozer is a single trip, and 10) any remaining miscellaneous equipment (fuel tanks, water tanks, etc.) is a single trip. The total number of truck trips to remove operating facilities is 30.

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A front end loader would be utilized during a 10-day period to completely remove all equipment. These costs are estimated using the Means handbook equipment rental cost. This loader could be operated by the truck drivers or the supervisor in charge of equipment removal.

General Site Cleanup & Trash Removal	\$1,875
Loading/Trucking (30 trips, \$405 per trip)	\$ 12,150
Crane (\$960 per day, 10 days)	\$ 9,600
Ref. Means 01590-600-1900	
Building demolition (100L X 70W X 20 H) @ 0.27 \$/cf	\$ 37,800

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Supervision would be required for the site clean up. The cost of supervision is estimated at \$35 per hour for 50 hours. Transportation for the supervisor is added at \$11.75/hr.¶

Total \$61,425

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9.6 Fencing

Approximately 2,900 feet of new fencing would be installed along the property line on the north and east sides of the property to tie in to the existing 3-strand barbed wire fence. Lakeview Rock Products will work with the future developers and land owners of adjacent property to ensure the site is sufficiently fenced to protect both parties, but for surety purposes, the 3-strand barbed wire is assumed.

2,900 feet @\$3.30 per linear foot installed \$9,570

9.7 Revegetation

Revegetation is planned for the, the safety berm (2.25 acres), the road spur (.45 acres), the highwall benches (15 benches – one time seeding), and the pit floor (56 acres). It includes surface preparation including ripping of pit floor, and road spur, and scarifying of the highwall benches. Calculations of bench surface areas are included in Appendix D. Seed would be broadcast on the benches, and drill-seeded in other areas (pit floor, safety berm, road spur) that reasonably accommodate the drill seeder. Areas inaccessible to the drill seeder would be broadcast seeded. Pit floor sampling parameter costs are included in Appendix D.

Safety berm (2.25 acres) and, road spur (.45 acres) \$2,219

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Add composted manure 2.7 acres @ \$175/acre (half of DOGM rate for 10 tons/acre) = \$473
 Rip 2.7 acres @ \$367/acre = \$991
 Seed with berm mix @ \$280/acre = \$756

Benches \$15,593
 Scarify 24.1 acres @ \$367/acre = \$8,845
 Seed with bench mix @ \$280/acre = \$6,748

Pit Floor \$51,282
 Sample pit floor 10 @ \$450 X \$75/sample = \$5,250
 Add composted manure 56 acres @ \$175/acre (half of DOGM rate for 10 tons/acre) = \$9,800
 Rip pit floor 56 acres @ \$367/acre = \$20,552
 Seed with pit floor mix @ \$280/acre = \$15,680

Revegetation total **\$93,904**

9.8 Mobilization and Demobilization

\$10,000

DOGM rate of \$2,000 per piece of equipment: D11, 992 loader, trackhoe, Cat 16 grader, crane.

Reclamation Total **\$282,732**

Reclamation Supervision (10% of Reclamation Total) \$ 28,273

Subtotal (1) **\$311,005**

Contingency (10%) \$ 31,100

Subtotal (2) **\$342,105**

Escalation (5 years at 4.44% per year) \$ 82,995

Total Surety Amount **\$425,100**

Surety Amount (rounded) **\$425,100**

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Deleted: Spread topsoil over pit floor material = \$26,910

Deleted: Reclamation costs involving the use of heavy construction equipment were partially determined through the use of "Means Heavy Construction Data, 17th Annual Edition". The equipment costs are total costs which include: total overhead and profit (including labor), bare equipment costs, and 10% profit. The bare equipment costs include delivery of equipment to the job site. No additional mobilization and demobilization costs are necessary.

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Deleted: Cost Summary

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Item ... [1]

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Deleted: 1 Contingency

A 10% contingency is added to the projected reclamation cost consistent with DOGM practices for surety calculations. This contingency amount is \$33,207.

Deleted: Escalation

An escalation factor is included into surety calculations to avoid repeated annual reviews of surety bonds posted. The time frame to be applied to the escalation factor is 5 years at a rate of 4.44% per year. This escalation cost is \$80,560.

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Reclamation Costs ... [2]

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10.0 References

Dames and Moore, et al. 1997. Beck Street Reclamation Framework and Foothill Area Plan, Draft.

Hely, Allen G., R.W. Mower and C. Albert Harr, 1971. Water Resources of Salt Lake County, Utah. Department of Natural Resources Technical Publication No. 31.

Reclamation Projects, Inc. (RPI). August 10, 1995. Mining and Reclamation Plan - Beck Street Operations. Prepared for Lakeview Rock Products, Inc., North Salt Lake City, Utah.

R.S. Means Company, Inc., 2003, Means Heavy Construction Data, 17th Annual Edition.

Utah Administrative Code R647-4. Large Mining Operations. As in effect September 1, 2003.

Utah Division of Water Rights, 2003. Information from online database operated by the State of Utah's Department of Natural Resources at <http://nrwt2.waterrights.utah.gov>.

Utah Division of Wildlife Resources, Conservation Data Center <http://atlas.utah.gov>

USDA, Soil Conservation Service, 1974. Soil Survey of Salt Lake Area, Utah.

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The rounded surety amount in year 2010 is \$448,000.¶

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LAKEVIEW BOND COST ESTIMATE							
9.1	Gates and Signs						
	gate cost	\$300					
	signs (6)	310					
	labor	600					
					9.1 TOTAL	\$1,210	
9.2	Pit Floor Regrading						
	speed(mph)	blade (ft)	efficiency	area (ac)	\$/hr		
	2.00	13.9	0.7	56.0	80.20	9.2 TOTAL	1904
9.3	Catch Basin Construction (storm = 2 catch basins with cross sections per schematic; rock= rockfall areas)						
	storm (cy)	rock (cy)	\$/cu yd				
	42270	18920	1.13			9.3 TOTAL	69145
	Means 2315-432-5500						
9.4	Safety Berm (12' wide 4' high, along top of highwall)						
	perimeter						
	length(ft)	sqf/lin ft	cu yd matl	\$/cu yd			
	6112	24	5433	6.40		9.4 TOTAL	34770
9.5	Safety Berm Topsoil Removal & Replacement (remove 12" topsoil from berm/ditch area= 24' across, & replace after berm constructed)						
	length(ft)	width(ft)	cu yd matl	\$/cu yd			
	6112	24	5433	4.68		9.5 TOTAL	25426
	Means 2315-424-0300 (track hoe)						
9.6	Bench Berm Construction (15 benches, berm @ each end)						
	# berms	linft/berm	\$/lin ft				
	30	25	0.25			9.6 TOTAL	188
	DOGM Rate						
9.7	Cleanup						
	General site cleanup & trash removal (estimate 25 out of 56 acres for cleanup)						
	# acres	\$/ac					
	25	75			1875		
	Loading/Trucking						
	# trips	\$/trip					
	30	405			12150		
	Crane						
	# days	\$/day					
	10	960			9600		
	Building demolition						
	length(ft)	width(ft)	height(ft)	\$/cu ft			
	100	70	20	0.27	37800		
	-removed supervision-						
					9.7 TOTAL	61425	
9.8	Fencing (installed, at top of highwall)						
	lin feet	\$/lin ft					
	2900	3.3				9.8 TOTAL	9570
9.9	Revegetation (top berm (2.25 acres), road spur (.45 acres))						
	Material	\$/ac	appl \$/ac	# acres			
	comp man	175		2.7	472.5		
	seed	280		2.7	756		
	ripping	367		2.7	991		
	DOGM rates, broadcast seeding						

					9.9 TOTAL		2219	
9.10	Revegetation - (16) benches- one time seeding							
	Material	\$/ac	appl \$/ac	# acres				
	scarify	367		24.1	8845			
	seed	280		24.1	6748			
	DOGM rates, broadcast seeding							
					9.10 TOTAL		15593	
9.11	Revegetation - Pit Floor							
	Material	\$/ac	appl \$/ac	# acres				
	comp man	175		56	9800			
	ripping	367		56	20552			
	seed	280		56	15680			
	DOGM rates, broadcast seeding							
	Sampling	# samples	labor\$/samp	lab\$/samp				
		10	75	450	5250			
	changed from 6 to 10				9.11 TOTAL		51282	
9.12	Equip mobilization (DOGM rate)				9.12 TOTAL		10000	
	D11			2000				
	992			2000				
	track hoe			2000				
	Cat 16 grader			2000				
	crane			2000				
9.13	RECLAMATION TOTAL						282732	
9.14	Reclamation Supervision (10% of Reclamation Total)						28273	
9.15	SUBTOTAL (1)						311005	
9.16	Contingency (10%)						31100	
9.17	SUBTOTAL (2)						342105	
9.18	Escalation - for 5 years at a rate of 4.44% per year						82995	
9.18	Surety Amount						\$ 425,100	
9.18	Surety Amount (Rounded)						\$ 425,100	

- removed topsoil -

updated